

NATIONAL WOOD PRODUCTS

FLOORING



FLOORING



Jackson, Mississippi, Plant

The picture above, taken from an airplane, gives a bird's-eye view of Evans Products plants at Jackson, Miss., where EVANITE, LAMINITE and EVERLEVEL flooring are produced. (1) Plant No. 1; (2) Plant No. 2; (3) Plant No. 3; (4) Cooling Shed; (5) Dry Kilns; (6) Charging Platform; (7) Sorting Chain; (8) Lumber Storage; (9) Power House; (10) Storage Building; (11) Garage; (12) Office; (13) Garage; (14) Cafeteria

NATIONAL Wood Product's treatment of the development of mastic bonded wood flooring as a science requiring highly skilled technical attention from the selection of timber to the actual installation of floors follows the traditional policy of every division of the parent company—thorough testing under every conceivable condition far and beyond those normally experienced in actual usage.

Although wood flooring is almost as old as architecture itself, the scientific advancements and improvements incorporated in modern buildings by the architectural profession, have brought about an entirely different problem in the application of wood floors to these new buildings. By recognizing this flooring problem as a science, the engineers of National Wood Products have made distinct contributions to the industry through the development of new methods starting with the log itself going on down through manufacturing and extending to the installation of the floor.

National Wood Products has at all times given careful attention to the viewpoints and requirements of architects and has maintained these in the foreground so that development work and engineering would be in tune with modern demands.

The long period of intensive experimental work at the company's modern plant in Jackson, Miss., resulted in the perfection, to the last detail, of three types of mastic bonded wood flooring—EVANITE, a wood block flooring of unique design for use where traffic is light but where both appearance and long service are desired; LAMINITE,

a fir plywood flooring which we sincerely believe to be the outstanding aristocrat among wood floors; EVERLEVEL, the ideal, heavy-duty flooring, as long-wearing as any end grain floor, as pliable as any block flooring but finer than any comparable floor because of its everlevel strip construction.

No detail has been overlooked which would add to the fineness, superior quality and serviceability of EVANITE, LAMINITE and EVERLEVEL flooring. Each step in the production of these floorings is made under the careful supervision and inspection of experts. It is through the application of proved scientific principles, the cutting, kiln seasoning, precision fashioning, packaging and the exclusive technique used in installation of National Wood Products floors which have made them outstanding in the flooring industry.

National Wood Products merchandises its flooring through carefully selected distributors with representation in nearly every large city in the United States, in addition to a wide representation by district field men. These forces are augmented by the sales and service organization at the home office, which is always available.

National Wood Products carries out an established policy of engineering its floors from raw material to the customer. The company's policy, however, does not end there. Installations are made through the National Wood Products distributors whose mechanical force is required to follow, even to the most minute detail, the exclusive method of installation laid down by our technical staff.



Modern Kilns

Partial view of the control room of the dry kilns used for seasoning the lumber that goes into National Wood flooring. These kilns are equipped with the most modern automatic and mechanical devices to assure proper treatment of the lumber before fabrication of the flooring



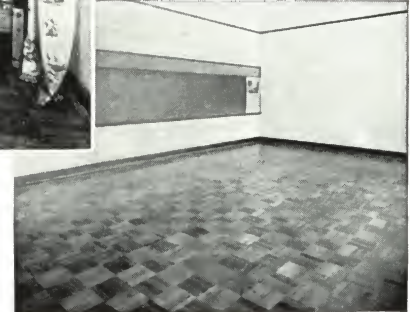
Nurses Home in
Massachusetts
Architect: Gordon Roble



Class Room
New Berlin, N. Y., School
Architects: Bley and Lyman



Recreation Room, Detroit residence
Architect: J. Ivan Dine



EVANITE

EEVANITE is a floor of character, combining all the features inherent in wood flooring and engineered, produced and installed under scientific methods to meet modern building requirements—methods which have resulted from years of experimental work and practical application and experience in the field.

Made from selected oak and beech in the standard grades, the natural beauty of EVANITE is enhanced by its skilful treatment from the time it is cut to its delivery. EVANITE is noted for its exceptional wearing qualities and is distinguished for its stable behavior after installation. By utilizing the near rift method of cutting, EVANITE reduces to a minimum the problem of expansion and contraction, permitting retention of ALL the practical advantages of quarter-sawn lumber without imposing a heavy price penalty on the customer.

The use of a specially designed battery of the latest type of air conditioning kilns for seasoning the lumber for EVANITE contributes in no small degree to the lasting beauty, serviceability and utilitarian features of this flooring. These kilns are equipped with the most modern mechanical and automatic equipment which safeguards against the element of human error and insures the drying of the lumber used in these blocks to the average moisture content best suited for the conditions or locality in which they are to be used.

EVANITE blocks are made up of carefully machined wood strips assembled with waterproof glue under pressure into composite units, the finished thicknesses of which are either 25/32 in. or 33/32 in. and in finished sizes of 9 in. x 9 in. or 6 in. x 12 in. The blocks are flat back (not hollow back) which insures obtaining the maximum bonding of the mastic between the wood floor and the sub floor. Tongues and grooves are provided on the blocks which are made in right and

left hand. The tongue and grooves are of the interlocking matched joint type so that when assembled with the adjoining blocks a double tongue and groove is formed around each block together with a continuous mastic groove around the under side of each block, providing a double seal and preventing the mastic from seeping through.

To assure the customer that he will receive EVANITE Wood Block Flooring in the same condition as it was manufactured, regardless of climatic and temperature variations, EVANITE is shipped in a vapor-proof container which affords protection for the contents even when the material is delivered on a job where actual installation work is delayed for one reason or another. The blocks are so packaged that they are protected from the damaging effect of moisture which normally occurs either from dampness of new buildings or weather conditions.

The methods developed for the installation of EVANITE Wood Block Flooring are outstanding and their use is one of the most important features of the floor. For this reason, National Wood Products insists that it must approve the primer and mastic used under EVANITE and will only approve such materials as it knows, through its own tests, are satisfactory.

One of the most significant developments, and perhaps the one contributing most to the continuing series of successful installations of EVANITE Wood Block Flooring, is the spring expansion joint. This spring expansion joint, originated and engineered by National Wood Products, when installed in accordance with their instructions, eliminates the trouble heretofore experienced with mastic bonded wood flooring due to the normal expansion and contraction of wood. Sketches showing typical methods of application of this spring expansion joint, as well as addi-



Edison Service Building, Detroit
Architect: John C. Thornton



tional information regarding it, are shown on page 5.

EVANITE, developed to conform to the most exacting requirements of architects, has multiple uses. It is this flexibility and variety of uses which materially broaden its field, thus simplifying the flooring problems of architects as well as builders.

The ready adaptability of EVANITE for use in schools and universities, where foot traffic is continuous, is indicated by its widespread acceptance throughout the country. The exclusive method employed in installation of EVANITE flooring in such buildings and the scientific principles embraced in its treatment and preparation for installation combine to establish the superiority of EVANITE where beauty and practicability, from every angle, form the primary demands.

For a number of reasons EVANITE fits in with the modern demands of the modern architect. Of utmost importance is the fact that EVANITE is laid directly on concrete subfloors in a cushion of mastic. This not only makes for resiliency but is easy on the feet and quiets the normal noise of foot traffic through the elimination of hollow spaces under the floor; there are no nails to loosen, therefore no squeaks when walked over; there are no supporting members to work loose, shrink or swell, which also adds to the feature of quietness. EVANITE installation also has important advantages from a hygienic standpoint. It prevents accumulation of foreign matter underneath the floor, minimizes the chance of germs breeding which is a natural hazard, particularly with floors which permit moisture to gather underneath. The value of this feature as a health measure is significant, especially in schools where large groups of students are gathered throughout the day.

The EVANITE method of installation does not permit an air space under the floor, thus acting as a combustion preventative and being, consequently, highly resistant to the dangers of fire.

By installing EVANITE flooring in mastic, directly on concrete, it becomes an integral part of the supporting member and takes on structural strength, eliminating the possibility of the flooring bending or giving as is the case in other methods of construction.

All in all the exclusive EVANITE method of installation materially increases the life of the floor. It is subjected ONLY to the wear



Display and Assembly Hall, Binghamton, N. Y., Gas Company
Architects: Conrad and Cummings

of abrasion because of its perfect support underneath.

EVANITE also has proved ideal for installation in homes, public buildings, libraries, museums, office buildings, assembly halls, banks, stores, ball-rooms, apartment buildings and industrial plants. And in every installation, from home to factory, EVANITE affords excellent opportunity for unique and artistic design. Further, it can be truthfully said that no other flooring has ever been found which so fully meets every demand as does EVANITE.

Use of EVANITE is not confined to NEW buildings. Even in old structures under process of rejuvenation and modernization EVANITE is peculiarly adaptable. In such instal-

lations EVANITE is laid on mastic which is applied to the original base in exactly the same manner as in a new building. Numerous installations of this kind have been made, and the excellent results attained are further proof of the wide field which exists for the use of EVANITE flooring.

Under the National Wood Products process of packaging, the blocks are cartoned immediately as they come off the machines, in rooms where temperatures are carefully regulated. The moisture-proof cartons are delivered to the job with contents in the same condition as when packed.

It is only necessary that the builder and architect have the building in a state which will closely approximate the normal conditions under which it will be used at the time of starting actual installation and that the packages be kept intact. These details combine to permit a perfect installation of a perfect flooring, scientifically preserved under natural conditions.



First Presbyterian Church, Ann Arbor, Mich.
Architects: Mayers, Murray and Phillip



Men's Furnishing
Store,
Milwaukee, Wis.



Cherry Street School, Johnson City, N. Y.
Architect: Walter H. Whitlock



EVANITE SPECIFICATION

PREPARATION OF SUB-SURFACES

CONCRETE SUBFLOORS

The concrete subfloor shall be float finished to a smooth and level surface using a reinforced wood screed or leveling darby float not to exceed eight feet in length. Steel troweling is not necessary and shall be avoided.

When finished and set, the concrete subfloor shall be free from sags or high spots, dust, loose sand or other foreign materials and protected against concrete or plaster droppings.

The distance that the concrete subfloor shall be below the required finish floor level is determined by adding $\frac{3}{32}$ in. (mastic) to the thickness of the wood floor specified. For areas requiring 2-ply membrane waterproofing, an additional $\frac{1}{4}$ in. must be added.

Expansion joints in the concrete slab or subfloor shall not be filled to within one (1 in.) inch of the surface level.

The concrete subfloor shall be dry before any wood flooring is applied and shall be subjected to moisture tests.

WATERPROOFING

A 2-ply membrane waterproofing shall be applied to the surface of the concrete subfloors in all areas where the concrete slab is in direct contact with the ground or when the space under the slab cannot be sufficiently ventilated to eliminate moisture condensation.

Installation of the membrane waterproofing shall not be made until the building is ready for the wood floors and shall be carried out under the supervision of the wood floor contractor.

WOOD BLOCK FLOORING

The following areas shall be finished with (CLEAR) (SELECT) (No. 1 COMMON) grade ($\frac{25}{32}$) ($\frac{33}{32}$) in. thick EVANITE Wood Block Flooring as manufactured by the National Wood Products

Division of Evans Products Company and hereinafter specified:

EVANITE WOOD BLOCK FLOORING

The lumber used in the block shall be kiln dried at the factory to an average moisture content of 7 per cent and at least 90 per cent of it shall have the annual rings at a minimum angle of 30° with the face.

The blocks shall be made up of solid wood strips not less than $1\frac{1}{2}$ in. nor more than 3 in. face width assembled with waterproof glue into composite units $\frac{25}{32}$ in. thick (also available in $\frac{33}{32}$ in. thickness) by 9x9 in. or 6x12 in.

The blocks shall be flat back (not hollow back) and provided with integral tongues and grooves of the interlocking matched joint type so that when assembled with the adjoining blocks, a double tongue and groove is formed around each block together with a continuous mastic groove around the underside of each block.

The blocks shall be packed and shipped in cartons suitably moisture proofed to protect the blocks from the absorption of moisture while in transit or storage prior to installation.

PRIMER—The Primer shall be a bituminous product especially prepared for use with the asphalt mastic cement and approved by the manufacturer of the wood block flooring.

MASTIC—The mastic shall be a properly prepared asphalt cement which retains its elasticity indefinitely and approved by the manufacturer of the wood block flooring.

SPRINGS—The expansion joint springs shall be $1\frac{1}{2}$ x $8\frac{1}{2}$ in. semi-elliptical flat steel springs as designed and furnished by the National Wood Products Division of Evans Products Company.

SEALER—The finish material shall be a good quality of penetrating floor sealer as recommended by the manufacturer of the wood block flooring and approved by the architect.

INSTALLATION

The flooring shall not be stored or installed in any part of the building until after it is completely enclosed and the concrete and plaster work in such part are completed and that part of the building is thoroughly dry. A temperature of at least 70 degrees F. shall be maintained where wood flooring occurs during the time of laying and after the floors are laid.

The primer shall be applied uniformly to the concrete and well worked in, using sufficient quantity to cover the surface perfectly. The primer shall be allowed to dry before the asphalt mastic cement is applied.

The asphalt mastic cement shall be applied on the priming coat in such quantities and in a manner to cause perfect adhesion to the concrete and flooring and shall not be adulterated or thinned in any way.

Laying generally shall be done in accordance with the directions of the flooring manufacturer and performed in such a manner as to give closely fitting joints in the finished work.

Expansion joints not less than $1\frac{1}{4}$ in. wide shall be provided at all walls, columns, thresholds and permanent fixtures. The expansion joints shall be left open as long as practical and then springs, as herein specified, installed on 18-in. centers in such a manner as to permit movement of the floor when necessary because of expansion or contraction. For details see page 5.

After the flooring is laid, it shall be machine sanded to a smooth, even surface, then brushed clean and given two coats of the penetrating floor finish specified, the last coat to be machine buffed with No. 3 steel wool or hand buffed with No. 00.

The wood block flooring shall be guaranteed by the manufacturer against defective material and workmanship for a period of one year.

NOTES

*Old concrete subfloors can be prepared to meet the sub-surface specification by the use of a formula containing Portland Cement, Asphalt Emulsion and sand in the proper ratio. The concrete floor must first be primed.

**EVANITE Wood Block Flooring may also be installed over wood subfloors; specifications on request.

***The waterproofing specification is for protection against moisture only and is not intended for areas where water pressure exists.

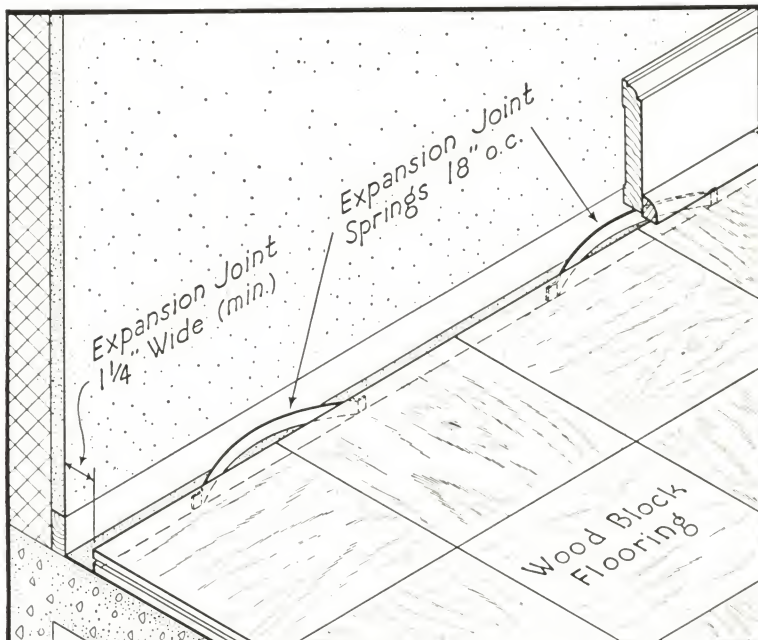
****EVANITE Wood Block Flooring is produced in $\frac{25}{32}$ in. or $\frac{33}{32}$ in. thickness, red or white oak and beech in the standard grades of: First (Clear); Second (Select) and Third (No. 1 Common).



Conference Room, Division of Instruction, Board of Education, Detroit

Architect: George L. W. Schultz

Additional copies of this specification will be furnished on request.



PERSPECTIVE — WHERE WOOD BASE IS USED

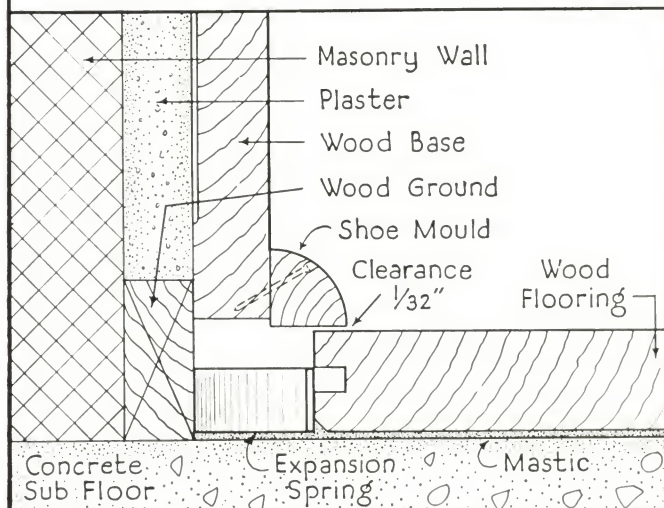
SPRING EXPANSION JOINT AND ITS APPLICATION

Recognizing the need of additional protection against the normal expansion and contraction of mastic bonded wood floors resulting from atmospheric changes, National Wood Products have engineered and developed the expansion joint spring (shown at left) which has been in successful use for several years.

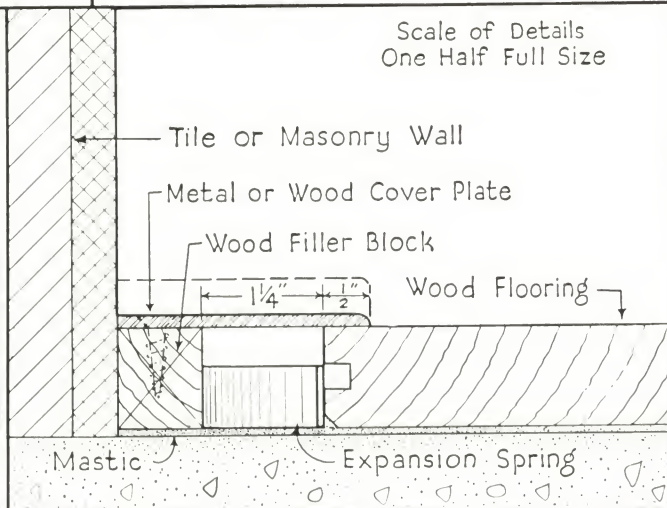
This spring, requiring a space $1\frac{1}{2}$ in. wide for its installation, has three unique features:

1. The spring can be fully compressed without breaking the mastic bond.
2. As the pressure of expansion is reduced, the spring returns to its original form, gradually forcing the outer rows of block to return to their normal position.
3. Maximum use is made of the expansion space available as the spring compresses to $\frac{1}{4}$ in.

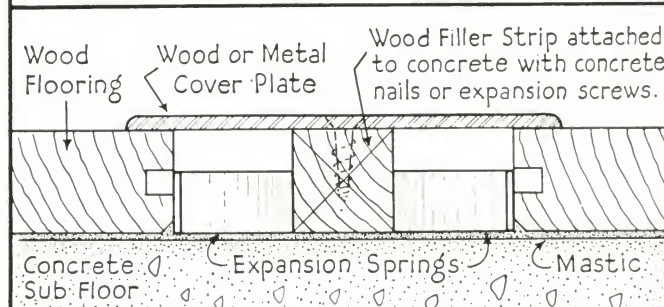
Scale of Details
One Half Full Size



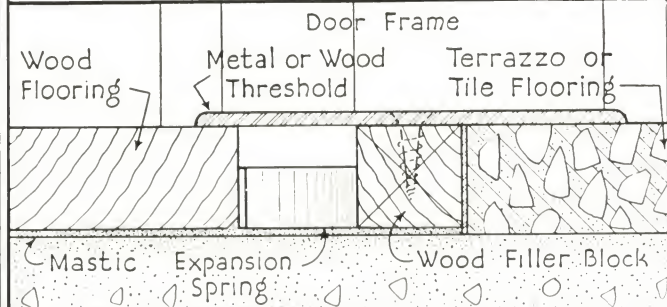
APPLICATION OF EXPANSION JOINT SPRINGS WHERE WOOD BASE & SHOE ARE USED



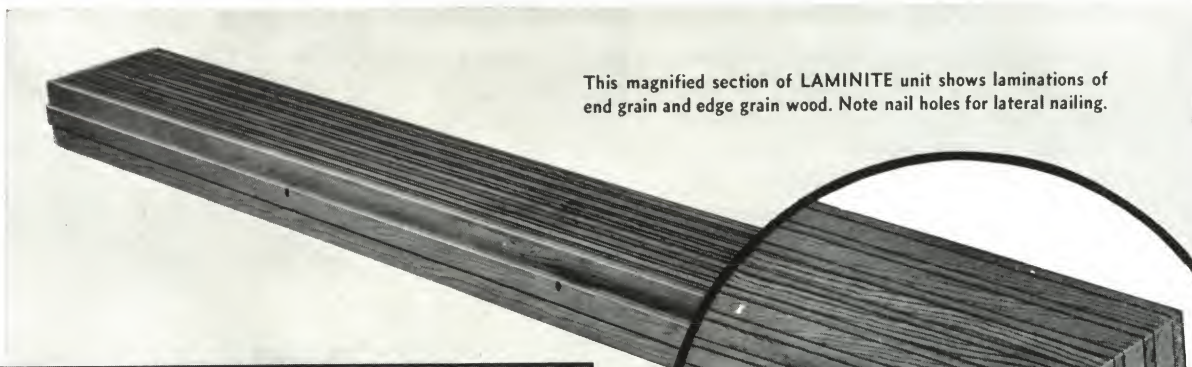
APPLICATION OF EXPANSION JOINT SPRINGS AT MASONRY OR TILE WALLS



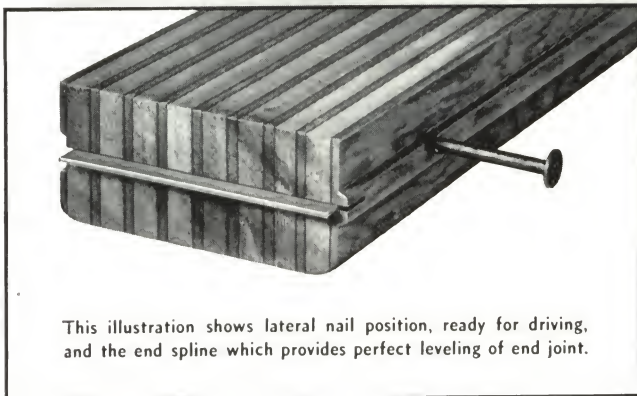
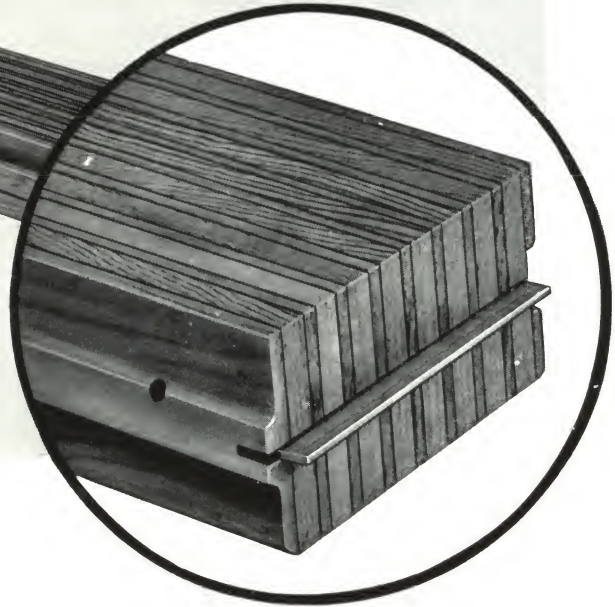
EXPANSION JOINT — WHERE ADDITIONAL EXPANSION IS NEEDED FOR LARGE AREAS



EXPANSION JOINT SPRINGS AT THRESHOLDS BETWEEN DIFFERENT FLOOR MATERIALS



This magnified section of LAMINITE unit shows laminations of end grain and edge grain wood. Note nail holes for lateral nailing.



This illustration shows lateral nail position, ready for driving, and the end spline which provides perfect leveling of end joint.

LAMINITE

COMPLETELY engineered and perfected after years of experimental and research work, LAMINITE is the ultimate as an all-purpose flooring. By means of patented construction which resulted from research engineering LAMINITE today occupies a position of leadership in the flooring industry.

LAMINITE installations, made over a period of years in a wide variety of buildings, have proved definitely that it is exclusive—that it is unique—that it stands alone among floors and can not be duplicated.

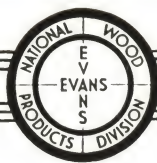
While the ability of LAMINITE to retain its perfectly flat surface under all conditions without "cupping" is the keynote of this unusual flooring, it also has attained an outstanding reputation for wearing qualities. This holds true whether it is used in gymnasiums, industrial plants or other places requiring high resistance to constant foot traffic and trucking. In addition to these features, LAMINITE flooring also harmonizes with quality appointments and lends an air of distinction to modern buildings.

The principle of plywood is not new, nor is the great wearing quality of end grain a recent discovery. But it was left to LAMINITE to combine the strength and resiliency of plywood construction with the wear-resisting features of end grain wood into a floor that would not warp or cup. This assures a permanent flat surface so essential to the playing areas of athletic competition and facilitating trucking and ease of foot traffic.

In combining these principles a flooring of remarkable appearance was certain to result. The tonal difference of the edge grain laminations and the end grain strips gives a color combination not found in any other flooring.

STRUCTURAL STRENGTH

Because of its laminated construction and lateral nailing, LAMINITE has structural strength approximately 75% as great as regular pine or fir flooring of equivalent thickness. This allows LAMINITE to be laid over sleepers as well as over subfloors. Actual load requirements are met by varying the thickness of units.



"LAMINITE" CONSTRUCTION

Heavy end grain as well as edge grain laminations are cut from the largest and finest Douglas Fir logs. These laminations after drying thoroughly are put together with waterproof glue to form blanks from which are cut the strips of LAMINITE flooring. The strips are then again normalized in kilns and are run with tongue and groove, drilled for lateral nailing and grooved for metal end splines, assuring a smooth, uniform surface that will not cup or warp.

MINIMUM UNITS TO FLOOR AREA

LAMINITE is milled in 7-foot lengths with the result that but 500 to 600 pieces of LAMINITE are used to cover 1,000 square feet of floor space. From 6 to 23 thousand pieces of end grain flooring are needed to cover the same area.

LATERAL NAILING

Because of the lateral nailing feature of LAMINITE, it forms a virtual "carpet of wood" when laid. Holes are drilled in each unit through which nails are driven in a lateral direction.

WEIGHT ECONOMY

The structural strength of LAMINITE allows it to be used in lesser thickness for any given duty than is possible with other end grain floors. This saving in weight is important.



Nashua, N. H. High School
Architects: Wells, Hudson and Granger



Department Store, Springfield,
Mass.

UNIVERSAL APPLICATION

Because of its unique construction LAMINITE may be laid in any manner in which other types of flooring are laid. It may be applied on mastic directly on concrete subfloors, on sleepers laid on the concrete subfloors, or over old wood floors.

SPECIAL USES

In addition to its value as a floor, LAMINITE has successfully met the need of a wall material in those places where a flat, non-cupping surface is required, such as playing walls of squash and handball courts. LAMINITE is also ideal for use in other places where it is desired to apply flexible materials to a supporting base free from ridges which result from "cupping"—a common complaint where conventional materials are employed.

Central School Class Room,
Marcellus, N. Y.
Architect: Carl W. Clark



Handball Court, R.P.I., Troy, N. Y.
Architect: Ralph G. Gulley



Bay City Times Press Room, Bay City, Mich.
Architect: Albert Kahn, Inc.





LAMINITE SPECIFICATION

PREPARATION OF SUB-SURFACES

CONCRETE SUBFLOORS

The concrete subfloor shall be float finished to a smooth and level surface using a reinforced wood screed or leveling darby float not to exceed eight feet in length. Steel troweling is not necessary and shall be avoided.

When finished and set, the concrete subfloor shall be free from sags or high spots, dust, loose sand or other foreign materials and protected against concrete or plaster droppings.

The distance that the concrete subfloor shall be below the required finish floor level is determined by adding $\frac{3}{8}$ in. (mastic) to the thickness of the wood floor specified. For areas requiring 2-ply membrane waterproofing, an additional $\frac{1}{4}$ in. must be added.

Expansion joints in the concrete slab or subfloor shall not be filled to within one (1 in.) inch of the surface level.

The concrete subfloor shall be dry before any wood flooring is applied and shall be subjected to moisture tests.

WATERPROOFING

A 2-ply membrane waterproofing shall be applied to the surface of the concrete subfloors in all areas where the concrete slab is in direct contact with the ground or when the space under the slab cannot be sufficiently ventilated to eliminate moisture condensation.

WOOD FLOORING

The following areas shall be finished with (1 $\frac{1}{8}$) (1 $\frac{1}{4}$) (1 $\frac{1}{2}$) (1 $\frac{3}{4}$) in. thick Laminite Fir Plywood Flooring as manufactured by the National Wood Products Division of Evans Products Company and hereinafter specified:

LAMINITE FIR PLYWOOD FLOORING

The wood flooring shall be of Douglas Fir and composed of end grain lamination separated by edge grain binders, all to be glued together with waterproof glue in composite strips 2 $\frac{7}{8}$ in. wide by (1 $\frac{1}{8}$) (1 $\frac{1}{4}$) (1 $\frac{1}{2}$) (1 $\frac{3}{4}$) in. thick by 7 ft. long.

The surface area of the end grain lamination shall be at least twice that of the edge grain binders. The strips so fabricated shall be kiln dried to a moisture content of 8 per cent, surfaced, provided with integral tongues and grooves and bored for lateral nails not more than 18 in. on center and end grooved for metal spline.

PRIMER—The primer shall be a bituminous product especially prepared for use with the asphalt mastic and approved by the manufacturer of the Laminite Fir Plywood Flooring.

MASTIC—The mastic shall be a properly prepared asphalt cement which retains its elasticity indefinitely, suitable for hot application and approved by the manufacturer of the Laminite Fir Plywood Flooring.

NAILS—The nails used for lateral nailing shall be 4 $\frac{1}{2}$ -in., 10-gauge cement-coated box nails.

SPRINGS—The expansion joint springs shall be 1 $\frac{1}{2}$ x8 $\frac{1}{2}$ in. semi-elliptical flat steel springs as designed and furnished by the National Wood Products Division of Evans Products Company.

SEALER—The finish material shall be a good quality of penetrating floor sealer as recommended by the manufacturer of the wood flooring and approved by the architect.

INSTALLATION

The flooring shall not be stored or installed in any part of the building until

after it is completely enclosed and the concrete and plaster work in such part are completed and that part of the building is thoroughly dry. A temperature of at least 70 degrees F. shall be maintained where wood flooring occurs during the time of laying and after the floors are laid.

The primer shall be applied uniformly to the concrete and well worked in, using sufficient quantity to cover the surface perfectly. The primer shall be allowed to dry before the asphalt mastic cement is applied.

The asphalt mastic cement shall be applied hot on the priming coat in such quantities and in a manner to cause perfect adhesion to the concrete and flooring and shall not be adulterated or thinned in any way.

Laying generally shall be done in accordance with the directions of the flooring manufacturer. The flooring shall be laterally nailed on not less than 18 in. centers and laid with the end joints well staggered.

Expansion joints not less than 1 $\frac{1}{4}$ in. wide shall be provided at all walls, columns, thresholds and permanent fixtures. The expansion joints shall be left open as long as practicable and then springs, as herein specified, installed on 18-in. centers in such a manner as to permit movement of the floor when necessary because of expansion or contraction. For details see page 5.

After the flooring is laid, it shall be machine sanded to a smooth, even surface, then brushed clean and given two coats of the penetrating floor finish specified, the last coat to be steel woolled with 00 steel wool.

The Laminite Fir Plywood Flooring shall be guaranteed by the manufacturer against defective material and workmanship for a period of one year.

NOTES

*Old concrete subfloors can be prepared to meet the sub-surface specification by the use of a formula containing Portland Cement, Asphalt Emulsion and sand in the proper ratio. The concrete floor must first be primed.

**Laminite can be installed over wood subfloors or over 1x4 in. strips when desired for gymnasiums; also applied to walls. Typical specifications furnished on request.

***The waterproofing specification is for protection against moisture only and is not intended for areas where water pressure exists.

****Laminite Fir Plywood Flooring is manufactured in the following thicknesses: 1 $\frac{1}{16}$ in. and 1 $\frac{1}{4}$ in. for light traffic; 1 $\frac{1}{2}$ in. and 1 $\frac{3}{4}$ in. for heavy duty service. Also available in thicknesses up to 3 $\frac{1}{2}$ in. if required for special uses.



Typical Gymnasium Floor in LAMINITE

Additional copies of this specification will be furnished on request.



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EVERLEVEL

WHERE extremely heavy traffic is the rule, EVERLEVEL is the answer. For sheer strength and ability to take abuse EVERLEVEL is without equal in its price class. It is a composite end grain flooring built up to form an entire floor secured in a single unit.

Appreciating the qualities of permanency of end grain blocks but recognizing the ordinary troubles inherent in single wood block installations, National Wood Products engineers perfected EVERLEVEL in such a manner as to eliminate the objectionable features without sacrificing any of the good ones.

Applied in resilient mastic, EVERLEVEL is a remarkably quiet floor for shops, receiving rooms, warehouses and other buildings requiring exceptional wearing quality but where natural noise must be deadened. It is particularly desirable for school shops since it eliminates use of sleepers. This is important especially on on-grade areas where sleepers are apt to rot due to possible exposure to moisture. A further advantage of EVERLEVEL in school shops is its cushioning effect on

the feet and its minimizing of noise and damage to tools when dropped on the floor.

EVERLEVEL is not just another wood block flooring. Its tee dowel and spline construction is such that it forms a cohesive covering rather than the loose, unconnected mass often found in block installations. The construction, however, is such that the individual blocks are free to move on the dowel and spline if expansion and contraction result from changes in the atmospheric moisture content. This exclusive method employed in EVERLEVEL blocks reduces to a minimum the possibility of splitting or checking.

EVERLEVEL, which is made in thicknesses up to 2½ in., is doweled securely into strips six feet in length with the dowels running the full length of the strip.

Each strip is then firmly secured to the adjoining unit by tight fitting, galvanized steel splines laid in continuous strip the full length or width of the floor. These features combine to make EVERLEVEL the only truly "ever level" end grain block floor.

If a tough, long-wearing floor is demanded, EVERLEVEL is the answer.



Installing EVERLEVEL, new U. S. Post Office Building, Boston

Ann Arbor Daily News,
Ann Arbor, Mich.
Architect: Albert Kahn, Inc.



Detroit Bakery Installation



U. S. Post Office, Morgan Park Station,
Chicago

EVERLEVEL SPECIFICATION

PREPARATION OF SUB-SURFACES

CONCRETE SUBFLOORS

The concrete subfloor shall be float finished to a smooth and level surface using a reinforced wood screed or leveling darby float not to exceed eight feet in length. Steel troweling is not necessary and shall be avoided.

When finished and set, the concrete subfloor shall be free from sags or high spots, dust, loose sand or other foreign materials and protected against concrete or plaster droppings.

The distance that the concrete subfloor shall be below the required finish floor level is determined by adding $\frac{3}{8}$ in. (mastic) to the thickness of the wood floor specified. For areas requiring 2-ply membrane waterproofing, an additional $\frac{1}{4}$ in. must be added.

Expansion joints in the concrete slab or subfloor shall not be filled to within one (1 in.) inch of the surface level.

The concrete subfloor shall be dry before any wood flooring is applied and shall be subjected to moisture tests.

*

WATERPROOFING

A 2-ply membrane waterproofing shall be applied to the surface of the concrete subfloors in all areas where the concrete slab is in direct contact with the ground or when the space under the slab cannot be sufficiently ventilated to eliminate moisture condensation.

**

Installation of the membrane waterproofing shall not be made until the building is ready for the wood floors and shall be carried out under the supervision of the wood floor contractor.

WOOD BLOCK FLOORING

The following areas shall be finished with Everlevel End Grain Strip Wood Block Flooring as manufactured by the National Wood Products Division of Evans Products Company and hereinafter specified:

EVERLEVEL END GRAIN STRIP WOOD BLOCK FLOORING

The blocks forming the strips shall be of carefully selected close grain southern yellow pine and show all end grain on the surface.

The surface dimensions of the blocks of which the strips are composed shall be not more than $2 \times 3\frac{3}{8}$ in. nor less than $1\frac{1}{2} \times 3\frac{1}{4}$ in.

The blocks shall be dressed square and true to uniform dimensions and shall be assembled in strips at the factory by means of continuous dowels. The strips shall be milled for metal spline for the purpose of securing the adjoining strips together.

The strips shall have a uniform width of not more than $3\frac{3}{8}$ in. nor less than $3\frac{1}{4}$ in. and an average length of (4) (6) ft. The thickness shall be uniform throughout and shall be not less than $(1\frac{1}{2}) (1\frac{3}{4}) (2) (2\frac{1}{2})$ in. unless otherwise specified. ***

The flooring shall be kiln dried at the factory to an average moisture content of 8 per cent, and after assembling into strips, given a protective coat of penetrating liquid filler of a type that will not prevent the satisfactory use of the finish coat of sealer.

SPLINE—The spline shall be $\frac{1}{2}$ in. wide x .040 thickness electro galvanized tempered steel strip.

PRIMER—The primer shall be a bituminous product especially prepared for use with the asphalt mastic cement and approved by the manufacturer of the end grain strip wood block flooring.

MASTIC—The mastic shall be a properly prepared asphalt cement which retains its elasticity indefinitely, suitable for hot application and approved by the manufacturer of the end grain strip wood block flooring.

SEALER—The finish material shall be a good quality of penetrating floor sealer as recommended by the manufacturer of the end grain strip wood block flooring and approved by the architect.

INSTALLATION

The flooring shall not be stored or installed in any part of the building until after it is completely enclosed and the concrete and plaster work in such part are completed and that part of the building is thoroughly dry. A temperature of at least 70 degrees F. shall be maintained where wood flooring occurs during the time of laying and after the floors are laid.

The primer shall be applied uniformly to the concrete and well worked in, using sufficient quantity to cover the surface perfectly. The primer shall be allowed to dry before the asphalt mastic cement is applied.

The asphalt mastic cement shall be applied hot on the priming coat in such quantities and in a manner to cause perfect adhesion to the concrete and flooring and shall not be adulterated or thinned in any way.

Laying generally shall be done in accordance with the directions of the flooring manufacturer. The flooring shall be laid to give closely-fitting joints in the finished work and the metal splines shall be continuous across the end joints between the strips.

Expansion Joints from 1 to 2 in., depending on the size of the floor, shall be provided at walls, columns, thresholds and permanent fixtures. The expansion joints shall be left open as long as practicable and then filled with a premoulded type of expansion joint filler or other suitable elastic material.

The surface of the floors in the finished work shall be even, and, if necessary, the floors shall be sanded sufficiently to bring the tops of the blocks and strips flush at the joints. Floors shall be brushed clean and finished with one or more coats of sealer as specified.

The end grain strip wood block flooring shall be guaranteed by the manufacturer against defective material and workmanship for a period of one year.

NOTES

*Old concrete subfloors can be prepared to meet the sub-surface specification by the use of a formula containing Portland Cement, Asphalt Emulsion and sand in the proper ratio. The concrete floor must first be primed.

**The waterproofing specification is for protection against moisture only and is not intended for areas where water pressure exists.

***EVERLEVEL is manufactured in the following thicknesses and lengths: $1\frac{1}{2}$ in. and $1\frac{3}{4}$ in. for light traffic, standard length 4 ft.; 2 in. and $2\frac{1}{2}$ in. for heavy duty service, standard length 6 ft.



This enlargement shows the tee doweling and continuous steel splines which combine to make EVERLEVEL a truly "ever level" end grain flooring

Additional copies of this specification will be furnished on request.

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NATIONAL WOOD PRODUCTS

FLOORING



FLOORING